

Iliac Wing Sign

Sentinel sign for ipsilateral pelvic and hip disorders



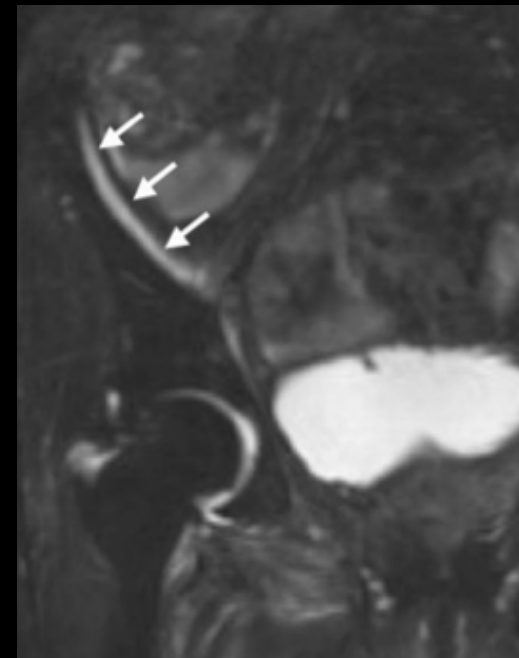
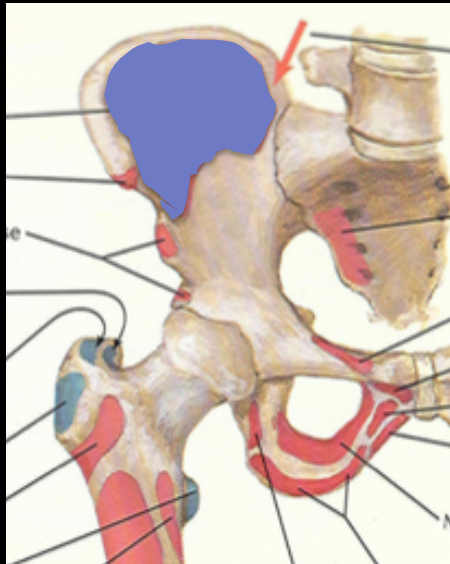
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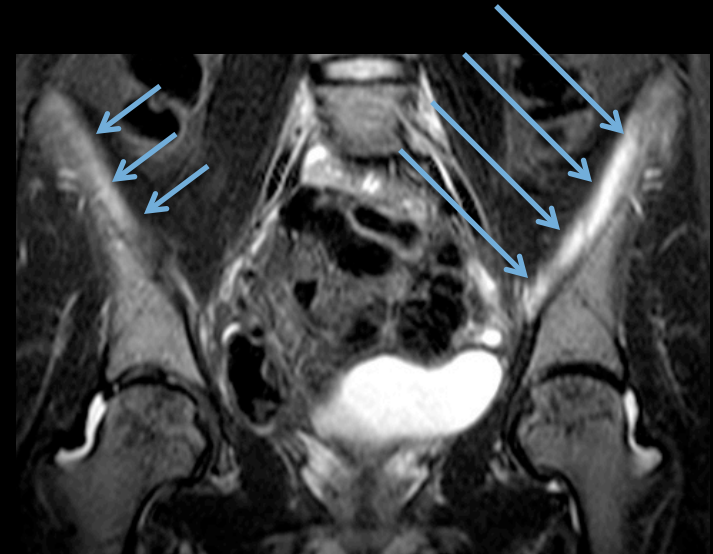
Iliac Wing Sign (IWS) ?

- High Intensity linear image on fat-suppressed T2 sequence
- On the interface between the deeper aspect of the iliacus muscle and the iliac bone

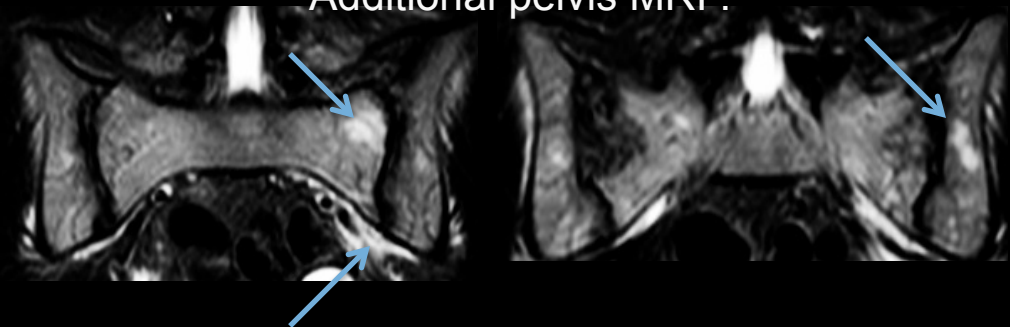


IWS: why indirect radiologic signs are important

- Mme B, 26 years old, suspicion of septic spondylodiscitis
- MRI of spine

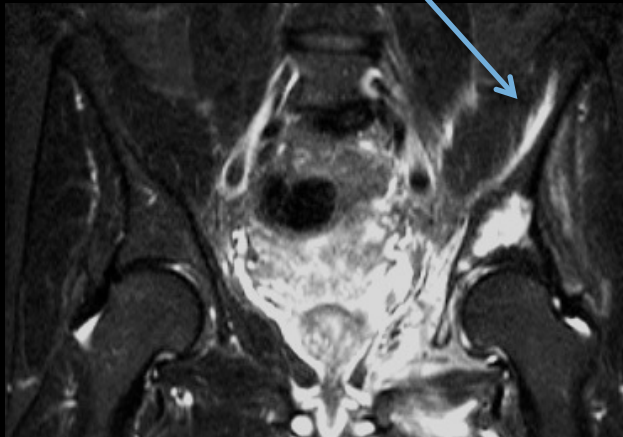


Additional pelvis MRI :

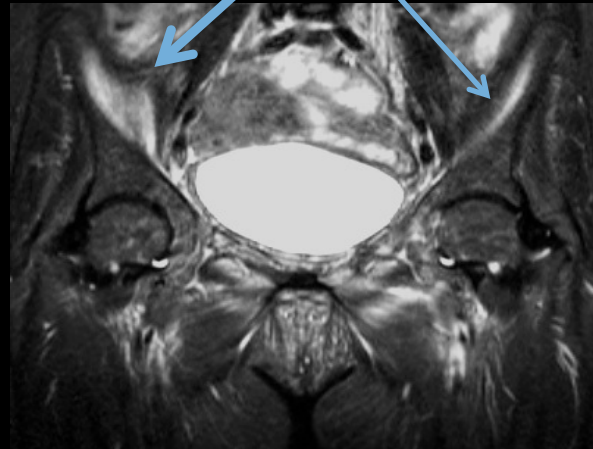


Precedent studies

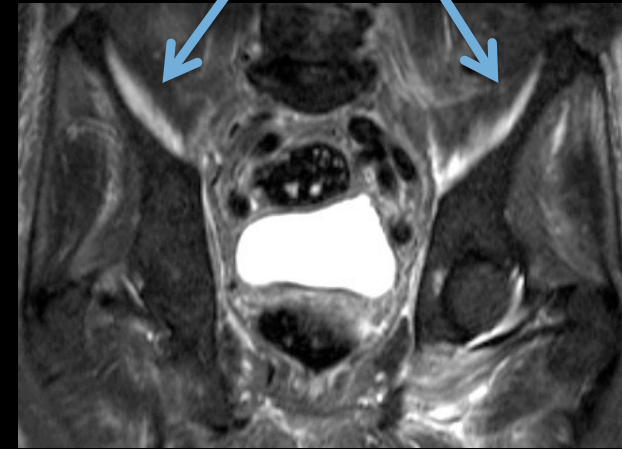
- But no correlation between IWS and
 - Age, weight, gender, status
- No distinction between:



Unilateral (U-IWS)



Bilateral and Asymmetrical (BA-IWS)



Bilateral Symmetrical (B-IWS)

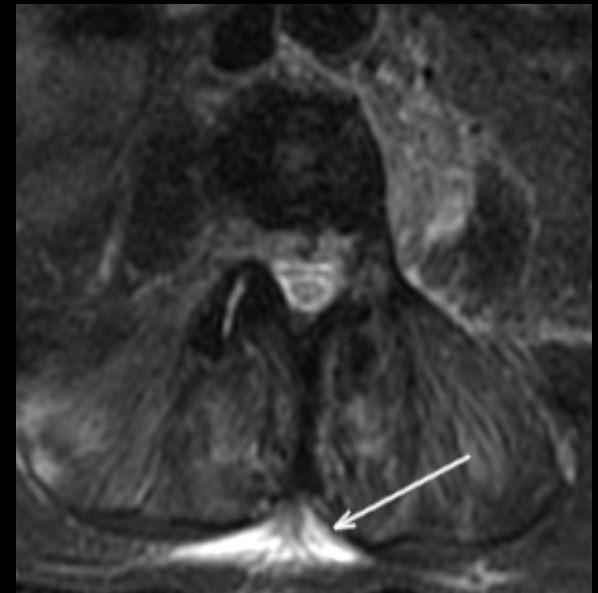
Iliac Wing Sign Study

- Retrospective study
- Review of pelvis MRI examination realised between 2010 and 2012
- Inclusion criteria: at least 1 coronal T2 with FS No hip prosthesis or other orthopaedic device, initial sacro iliitis suspicion
- 304 MRI included
- Average Age of patients : 44 years old (0,5-87)
- 172 men and 132 women



Clinical data

- Presence and IWS type
 - independent review by 2 radiologists
- Presence of pathologies by consensus
 - With histological proofs if present
- Associated findings
 - Coxofemoral joint effusion? Ilio psoas bursitis ?
 - Hip pain?
 - Posterior to lumbar spine soft tissue oedema (PLSTE)
 - Depending on patient age or heart/kidney insufficiency but not on spine pathology

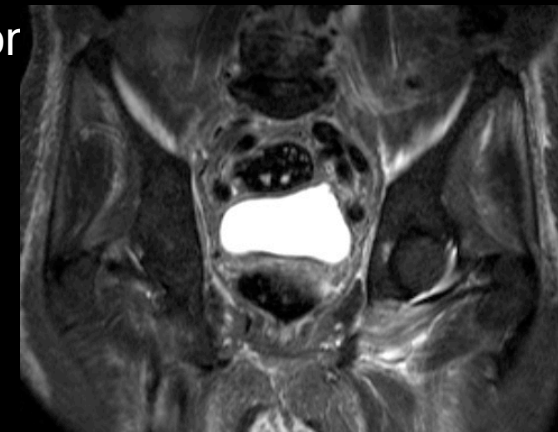
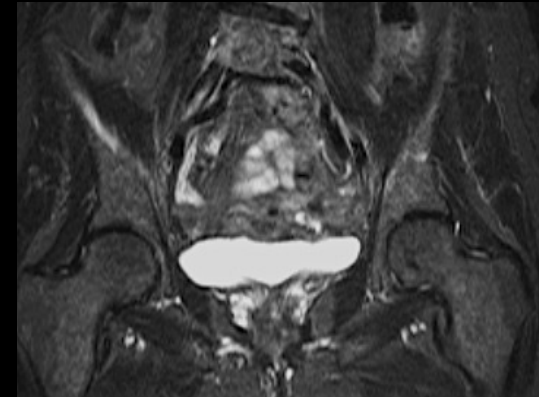


Shi, AJR, 2003

Genu, Diag Interv Imagin, 2014

IWS : RESULTS

- IWS : prevalence : 27%, PPV 96%, NPV 35%
- **U-IWS and BA-IWS: PPV=100%** (84% for B-IWS)
- Ipsilateral pathology : **U-IWS: 90%** (low rate for other IWS types)
- rare enhancement of IWS in case of gadolinium injector (4/27)
- Inter reader reliability:
 - Kappa > 0.9



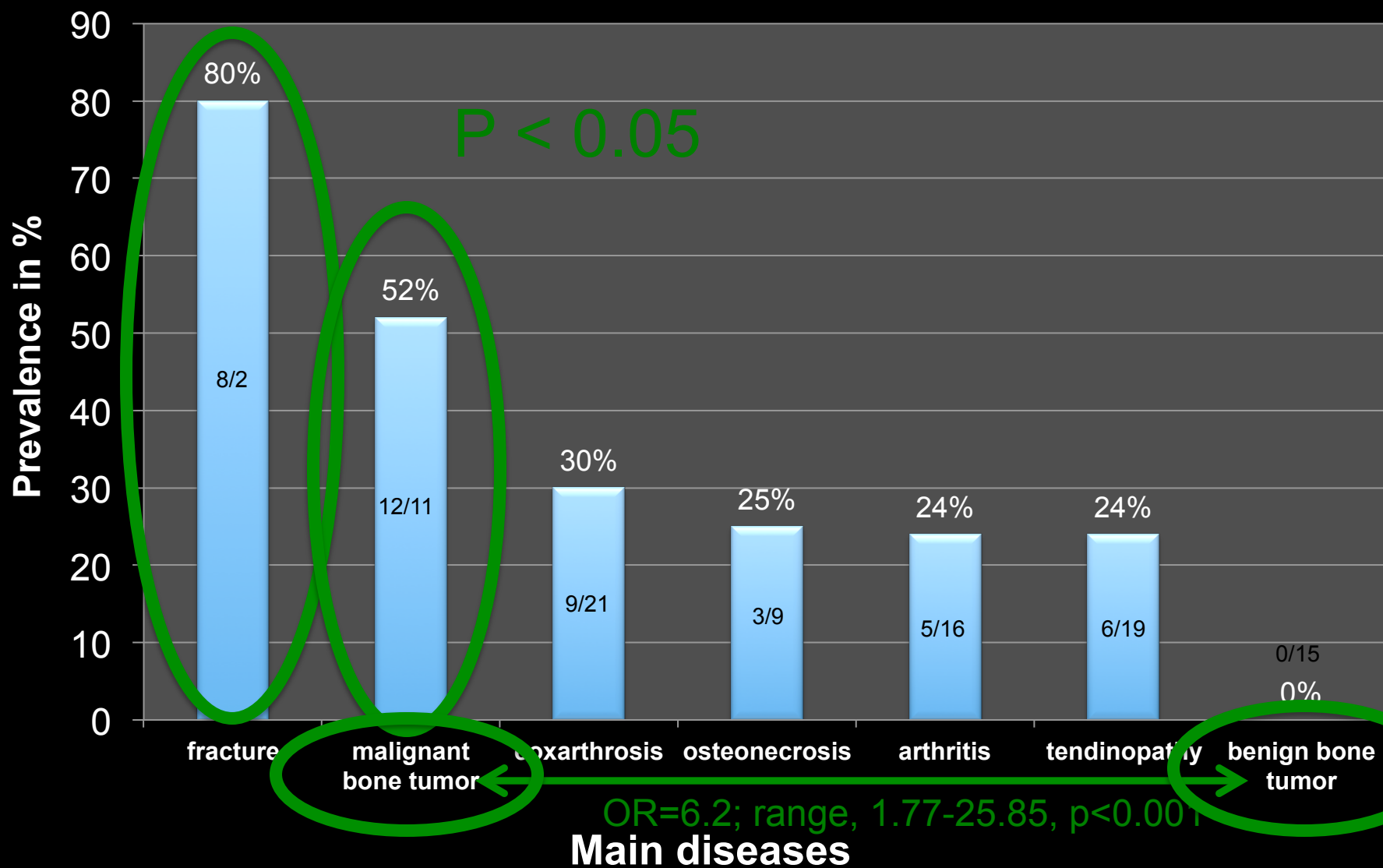
Results : IWS and clinical data

Association	Age	Posterior to lumbar spine soft tissue oedema	Coxofemoral joint effusion
U-IWS	+ (OR=1,5)	NS	+ (OR=1,98)
BA-IWS	+ (OR=2,4)	++ (OR=15,7)	+ (OR=2,45)
B-IWS	+ (OR=2,05)	+++ (OR=20,6)	NS

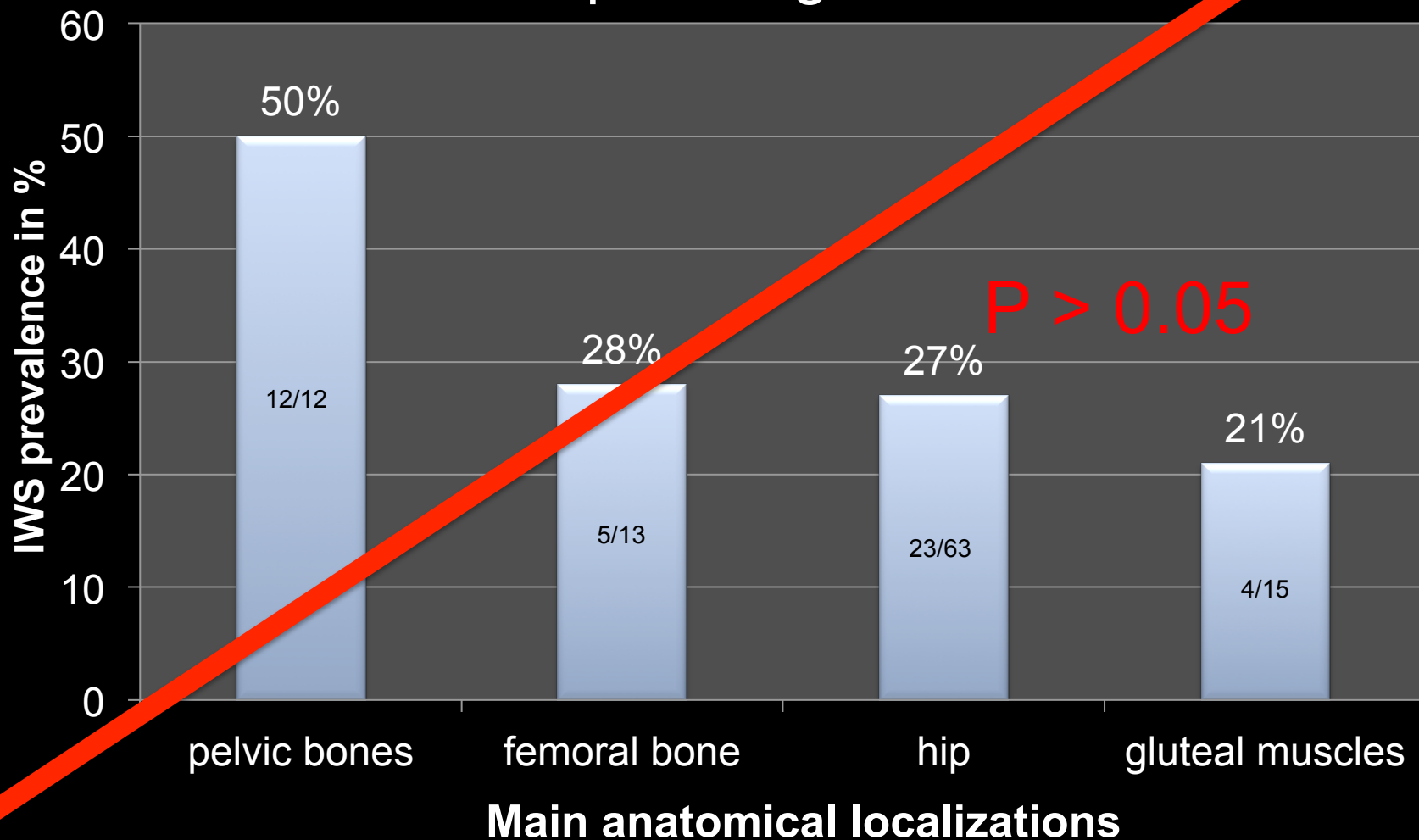
OR : odds ratio ; NS : non significant

- No statistical association between IWS (all IWS type) and :
 - Ilio psoas bursitis
 - Hip Pain
 - Gender, weight, status

IWS prevalence given Main Diseases



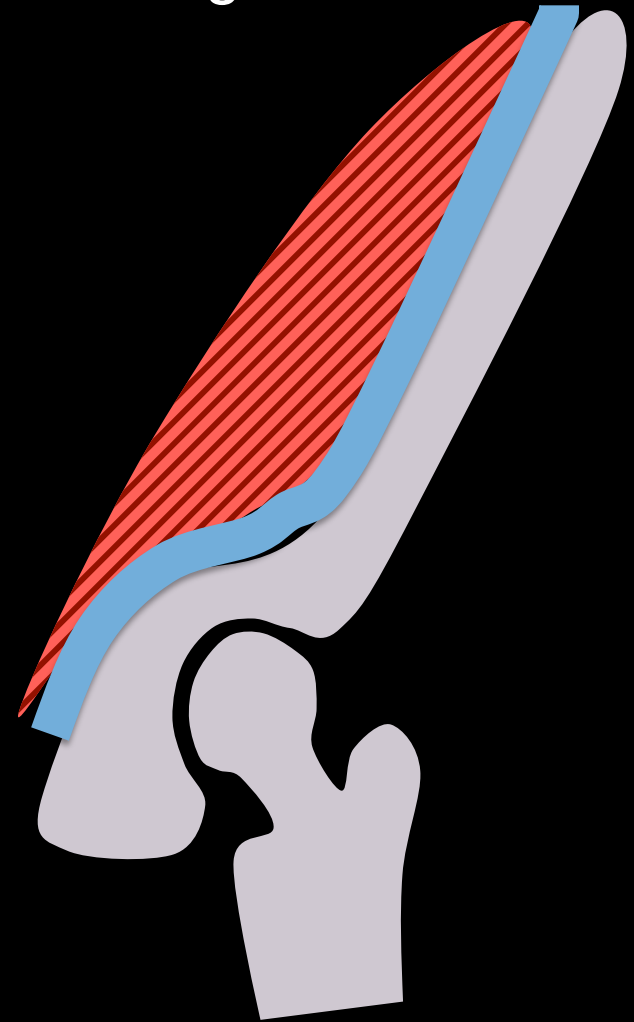
IWS prevalence given main anatomical localizations of pathologies



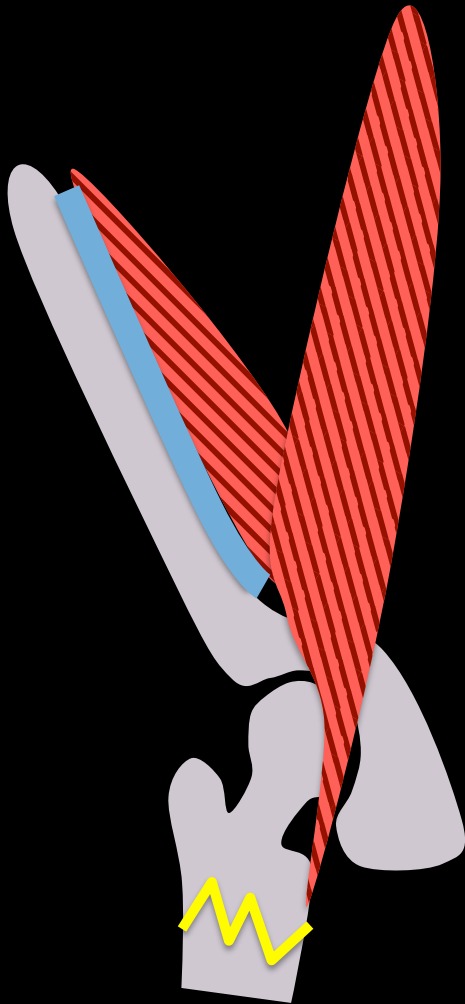
What is IWS ?

- Layer of **like water** High intensity on T2 weighted sequence with fat suppression
- Enhancement was unusual
 - Eshed

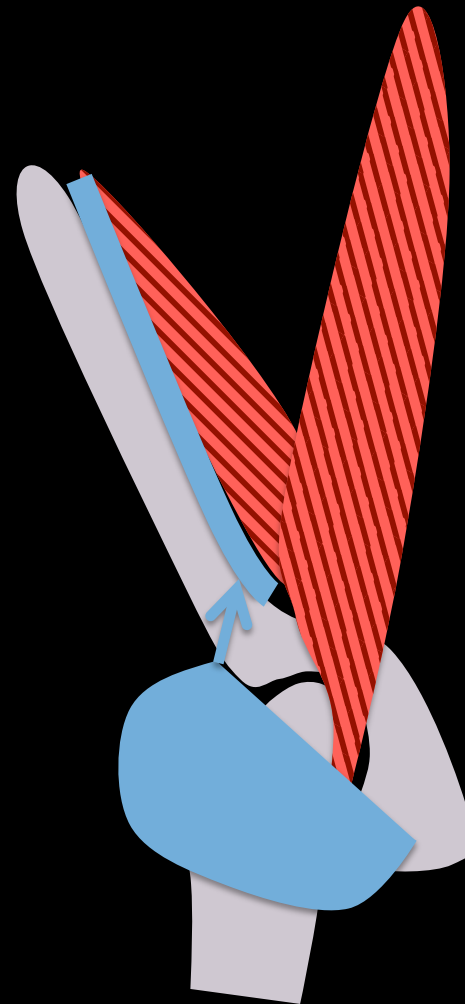
Vasogenic Oedema >>
inflammatory tissue



Physiopathology ?



Kakigi

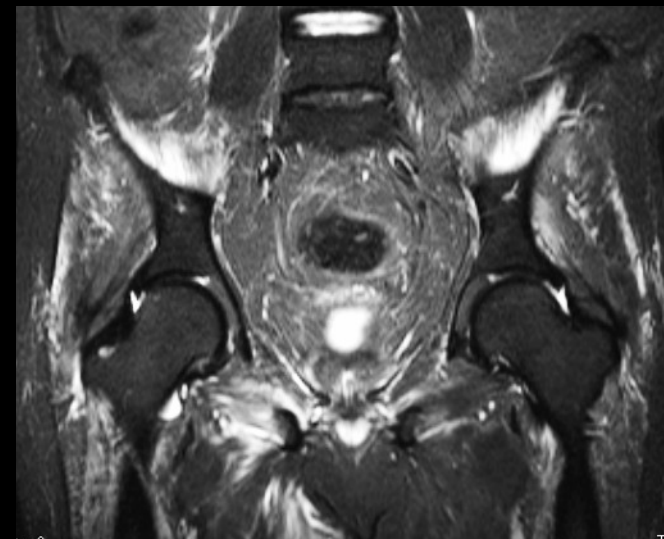
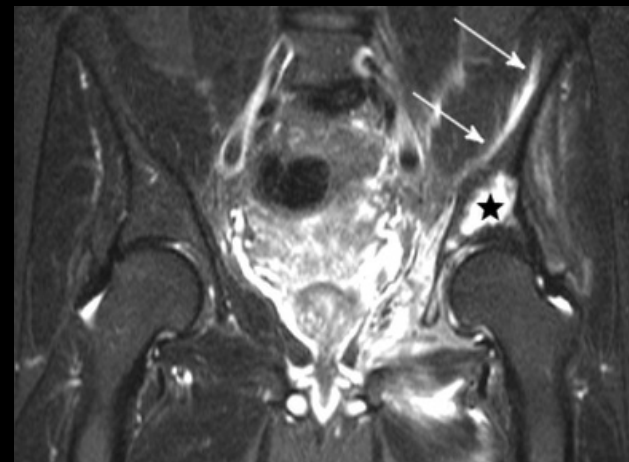


Eshed

8% Arthro MRI (total 50)

Conclusion

- IWS is correlated with age
 - Mainly in bilateral type (B-IWS)
- IWS is an ipsilateral sentinel sign
 - Especially in U-IWS et BA-IWS types: PPV of pathology = 100% and good localization skill
 - Excellent inter reader reliability
- IWS is more often seen
 - In case of fracture
 - In case of malignant bone tumor: indirect sign of neoplasia





Thanks for your attention